



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D. C.

AUG 25 1958

AFHQ

SUBJECT: Aircraft Artificial Contrail Generator

TO: ARDC SAC

TAG

ASAC

1. This headquarters is considering an operational requirement for development of an aircraft artificial contrail generator to reduce the probability of mid-air collision during high altitude operations. Such devices have been used and are now being used for airshows, serial advertising and gunnery rendezvous purposes.

2. The device would normally be installed on all strategic, tactical, air defense and tanker aircraft. Installation would also be made on all reciprocating and turbo-prop aircraft.

3. The proposed requirement establishes the following guidelines and objectives.

a. Minimum weight, size and interference with aerodynamic and performance characteristics.

b. Minimum overall initial and recurring maintenance cost. Minimum initial modification to aircraft.

c. Selective operation by the pilot.

d. The device should emit a nonpersistent continuous or (by selection) broken contrail that will disperse not less than one mile behind the aircraft. Contrails should be nonpersistent in all climatic and flight conditions.

e. Provision in the generator device is desired for use of a chemical that will produce a colored contrail preferably of international orange color.

f. Development consideration should be given to the use of a concentrated chemical that could be added to the aircraft fuel, obtained through a system segregated from the engine fuel system, and mixed with the exhaust heat to produce contrails.